

CLAIMS

sub part 1
What is claimed is:

1. 1. An auxiliary power system for operation in cooperation with a primary engine
2. having a battery, comprising
 3. (A) a secondary engine, and
 4. (B) control means which shuts down such primary engine and starts such secondary engine following a predetermined time period of idling of such primary engine.
1. 2. The auxiliary power system of claim 1, in which
 2. such control means starts such secondary engine in response to a predetermined ambient temperature if such primary engine is not operating.
1. 3. The auxiliary power system of Claim 1, further comprising
 2. an electrical power producing means driven by such secondary engine.
1. 4. The auxiliary power system of Claim 3, in which
 2. such electrical power producing means comprises a 240vac, 60Hz, single-phase electrical generator.
1. 5. The auxiliary power system of Claim 4, in which
 2. such electrical generator produces at least 17 kva of power.
1. 6. The auxiliary power system of Claim 4, further comprising
 2. battery charging means.

- 1 7. The auxiliary power system of Claim 6, in which
- 2 such control means
 - 3 (i) isolates the battery of the primary engine from all dc loads upon
 - 4 operation of such secondary engine, and
 - 5 (ii) continuously charges the battery during operation of such
 - 6 secondary engine.
- 1 8. The auxiliary power system of Claim 1, further comprising
 - 2 (A) primary engine coolant pumping means, and
 - 3 (B) heat exchanging means.
- 1 9. The auxiliary power system of Claim 8, further comprising
 - 2 engine coolant heating means.
- 1 10. The auxiliary power system of Claim 9 further including,
 - 2 coolant temperature sensing means, and in which
 - 3 such control means maintains primary engine coolant temperature within a
 - 4 predetermined temperature range.
- 1 11. The auxiliary power system of Claim 9, in which
 - 2 such engine coolant heating means comprises electric heaters.
- 1 12. The auxiliary power system of Claim 1, further comprising
 - 2 primary engine lube-oil pumping means.
- 1 13. The auxiliary power system of Claim 12, further comprising,
 - 2 lube-oil heating means.

- 1 14. The auxiliary power system of Claim 13, further including,
2 primary lube-oil temperature sensing means, and in which
3 such control means maintains primary engine lube-oil temperature within a
4 predetermined temperature range.
- 1 15. The auxiliary power system of Claim 13, in which
2 such lube-oil heating means comprises electric heaters.
- 1 16. The auxiliary power system of Claim 1, further comprising
2 a remotely operable primary engine coolant drain valve.
- 1 17. The auxiliary power system of Claim 16, in which
2 such control means causes such remotely operable drain valve to open and drain
3 the primary engine coolant after a predetermined period of time in response to a
4 predetermined ambient temperature if such primary engine is not operating and such
5 secondary engine fails to start.
- 1 18. A method of supplying auxiliary power to a primary engine comprising the steps
2 of
 - 3 (A) providing a secondary engine coupled to an electrical generator
 - 4 (B) monitoring the operating condition of such primary engine
 - 5 (C) starting such secondary engine in response to a predetermined condition of
6 such primary engine.

1 19. Method of claim 18, in which
2 the predetermined condition of such primary engine is selected from the group
3 consisting of:
4 (i) idling of such primary engine for a predetermined period of time,
5 and
6 (ii) non-operation of such primary engine combined with a
7 predetermined ambient temperature.

1 20. Method of claim 18, further comprising
2 providing heating means for such primary engine coolant, and
3 providing heating means for such primary engine lube-oil.

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